frontier economics

THE VALUE OF PRIVATE HEALTH INSURANCE

14 NOVEMBER 2022

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Executive Summary

The NHS is, and has been, under significant resource pressure for some time. In England, depending on the precise definition used, anywhere from 5.5 million to over 7 million people are waiting for treatment by the NHS. This has an impact on treatment in many areas, times to first appointment and first treatment for cancer have been rising steadily since mid-2020. While attendances at A&E have been broadly steady since summer 2021 the numbers of patients waiting 12+ hours have steadily increased.[1]

The NHS played a central role in our national response to Covid and continues to lead on this and many other crucial health challenges from improving cancer survival rates to GP access to care for the elderly. The NHS, ever evolving to meet the challenges of the times, is the central element of our common and widely agreed national response to the huge value of being able to live a healthy life. There are a number of other elements supporting that objective: public health issues led by the Office for Health Improvement and Disparities, protection from specific health threats led by the UK Health Security Agency, training for health professions led by higher education institutions and Royal Colleges and many others. One element within that is the role played by private health insurance.

This report focuses specifically on that latter element – the role of private health insurance. The report was commissioned by AXA Health and includes some of their data from its large employer portfolio. Frontier Economics have independently undertaken the economic analysis in the report. It is intended to re-start a discussion about the role of private insurance rather than settle on a particular position. AXA Health is one of the leading UK providers of health insurance to individuals and employers, supporting the health and wellbeing of 2.8 million individuals across the UK.

Although AXA Health supports individuals across a wide range of conditions, this report focuses on three specific areas of treatment: musculoskeletal ("MSK") conditions, mental health conditions and cancer. It also focuses on the treatments provided for employers with over 250 employees. Those employers cover a very wide range of different types of employees at all levels of their organisations. The decision to focus on these areas is informed by the volume of cases to AXA Health, the potential benefits to society in these areas and the availability of public data.

Private health insurance benefits individuals, and wider society, by providing quicker treatment. We make no claims of clinical outcomes from any individual intervention being any better *per se*, the fact the intervention takes place sooner can lead to better patient outcomes in aggregate. We model the impact that reduced waiting times have on quality of life, sickness benefits and employee productivity.

There is a wider debate about whether faster access to private care affects the speed of delivery of NHS care. That could be the focus for wider work. We did not have access to the data to examine the issue for this work. We quantify three potential benefits of faster treatment:

[1] : https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/pressures/nhs-backlog-data-analysis

1. **Faster return to work from ill health:** The faster route to treatment that private health cover provides can get employees back to good health and into work faster, leading to a reduction in government-funded sickness benefits claims. We estimate that private health cover can reduce sickness benefits claims by at least £7.2m per year. This is likely to be a lower bound estimate because the modelling does not include the potential savings that can arise from quicker treatment reducing the likelihood of avoiding long term sickness.
2. **Improved productivity**: Productivity is lost every year due to absenteeism resulting from poor health. When patients are able to receive treatment more quickly through private health care, they are likely to return to good health sooner, having to take less time off work. We estimate that private health cover reduces lost productivity by more than £32m per year.
3. **Improved quality of life**: If patients are treated sooner, they return to better health more quickly, improving their quality of life. We estimate that the total impact on quality of life from faster treatment due to private health cover is worth about £350m per year.

This only takes into account the benefits raised above, based on conservative estimates, and does not include any savings directly related to the NHS through a reduction in patient numbers or savings on treatment costs. In total, we estimate that private health insurance cover as provided by AXA Health provides benefits that are worth more than c£440m per year. This is based on AXA Health's contribution to employers with more than 250 employees and across three treatment areas.

There are barriers to the uptake of private provision on both the supply and demand side. On the demand side, barriers include the cost to individuals of taking up private provision and cultural expectations around paying for healthcare. We make the following recommendations:

- Encouraging more employers to offer PMI and private health and wellbeing support services;
- Encouraging cultural shifts and attitudes towards PMI and health and wellbeing support services take up;
- Reducing tax employers pay on PMI and health and wellbeing support services; and
- Conducting independent reviews to build evidence on the efficacy of the above recommendations.

Introduction and context

Frontier Economics has been commissioned by AXA Health to provide an independent assessment of the value of private health insurance to society in the UK.

The study draws upon best practice methods and peer reviewed evidence. It combines public information and information provided to us by AXA Health which operates in the UK. The analysis sets out the differences between public and private healthcare provision, focussing on three areas: musculoskeletal (MSK) disorders, mental health, and cancer. The report also considers public and private GP services.

The study considers the impact of increasing private health provision in these three areas to UK society as a whole: to patients, employers, and the wider UK economy. It also considers the barriers to existing private uptake, and describes a set of policy recommendations that could help to increase uptake. In developing the policy recommendations, we have benefitted from a small number of conversations with experts at AXA Health.

Frontier, as the authors of the report, and AXA Health recognise that the balance between public and private provision of healthcare in the UK is a complex issue. The NHS, ever evolving to meet the challenges of the times, is central to meeting the national goal of ensuring that every person in the UK has the opportunity to live a healthy life. There are a number of other elements supporting that objective: public health policy led by the Office for Health Improvement and Disparities, protection from specific health threats led by the UK Health Security Agency, training for health professions led by higher education institutions and Royal Colleges and many others.

This report, the analysis, discussion and recommendations within are intended to add to the ongoing debate. This brief piece of work is not intended to fully characterise the issue or the solution but is intended to offer analysis and ideas pragmatically about one of the biggest challenges currently facing the healthcare systems in the UK.

Healthcare provision in 2022

The NHS plays an important role in the health of the UK

The vast majority of healthcare in the UK is publicly funded and provided. The NHS in England is Europe's largest publicly funded health service, employing 1.3 million people. Overall, however, healthcare spending has increased significantly since the NHS was established in 1948, reaching £137 billion in England in 2019/2020.[2] Each day the NHS in England is said to see over 835,000

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1003755/CCS207_CCS0621818186-001_PESA_ARA_2021_Web_Accessible.pdf

patients visiting their GP or practice nurse; almost 50,000 patients in accident and emergency; 49,000 outpatient consultations and 36,000 people in hospital for planned treatment.[3]

Despite its size and reach, NHS pressures have been building over a long period. Even before the Covid-19 pandemic waiting lists were rising and the NHS was struggling to meet some of its targets.[4] For example, before the Covid-19 pandemic, NHS waiting lists in England grew from 2.9 million people in January 2015 to 4.4 million in December 2019 to arguably over 7 million by 2022.[5]

The current situation is that the NHS is under significant resource pressure. The NHS is facing staff shortages, with staff vacancies at around 110,000. Furthermore, staff morale has fallen, with nearly a third (31%) of staff considering leaving the workforce.

Meanwhile, demand for NHS services will continue to rise due to rise due to an ageing population. In the next 25 years, the number of people older than 85 will double to 2.6 million.[6] These pressures are made worse by limited capacity in social care, leading patients to rely on NHS services where social and community health care is lacking. Added to this, high energy costs and inflation more generally are eroding the value of the NHS budget.[7]

With more than 43,000 patients waiting more than 12 hours for emergency care in October 2022[8] and more than 400,000 GP referrals to outpatient services being unsuccessful due to lack of capacity[9], NHS leaders anticipate a worsening situation with difficult decisions to be made – choices between cutting back patient care or waiting times continuing to lengthen are being actively debated.[10]

There are privately provided alternatives to the NHS

Private health provision can be an alternative or addition to the NHS in some circumstances. Many people in the UK hold private health insurance policies as an adjunct to the NHS – although the numbers represent a minority of the population. Private care can be funded in a number of different ways: (i) through health insurance individual premiums, mainly provided through employers, but also purchased directly; (ii) by individuals paying for services and treatments directly; or (iii) by the NHS itself.

Where private health insurance and private health and wellbeing services are provided to employees through an employer, employees will pay income tax that relates to the cost of the insurance premium

[3] https://www.jobs.nhs.uk/about_nhs.html

[4] https://www.health.org.uk/news-and-comment/charts-and-infographics/elective-care-how-has-covid-19-affected-the-waiting-list

[5] https://www.health.org.uk/news-and-comment/charts-and-infographics/elective-care-how-has-covid-19-affected-the-waiting-list and https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/pressures/nhs-backlog-data-analysis

[6] https://www.health.org.uk/publications/our-ageing-population

[7] https://www.nhsconfed.org/news/nhs-leaders-facing-real-terms-cut-funding-and-impossible-choices-over-which-areas-patient-care

[8] https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/pressures/nhs-backlog-data-analysis

[9] In November 2021, https://www.bma.org.uk/advice-and-support/nhs-delivery-and-workforce/pressures/nhs-backlog-data-analysis

[10] https://www.nhsconfed.org/news/nhs-leaders-facing-real-terms-cut-funding-and-impossible-choices-over-which-areas-patient-care

or service, as the policy is treated as a 'benefit in kind'. The employer, on the other hand, will pay National Insurance Contributions and the insurance premium tax (IPT), which is currently 12%.

Although private provision in the UK is very small compared to the NHS, there are signs it could be growing in light of NHS pressures. Around one in ten people hold some form of private health insurance.[11] In 2020, it was reported that sales of private medical insurance policies increased by 40% on the previous year. And in 2021 one private healthcare provider reported a jump of 25-35% in self-funded patients in its London hospitals.[12] Private provision is not an insignificant expenditure, with the average yearly private health insurance premium around £1,500.[13] For reference, and as an alternative cost, the average cost of hip replacement and knee surgery are around £11,000 and £12,000 respectively.[14]

Private provision and the NHS can be interdependent. In many cases private provision draws on staff who also work for the NHS. An increase in the provision of private care might not, in all circumstances, result in an equal amount of capacity freed up in the NHS. UK citizens who are privately insured also have access to the NHS, through being an UK taxpayer. When individuals get their treatment paid for through their private insurance, costs of treatment to the NHS are saved. We expand upon this point in our final section 5.

The UK economy is currently facing many pressures

The UK economy continues to be subject to a range of macroeconomic pressures, and the Government's fiscal position is challenging. The global health crisis caused by Covid, widespread impacts caused by Russia's invasion of Ukraine both contributing to an almost unprecedented energy and inflationary situation mean that the UK economy is under pressure not seen for many years. Government debt is now over 90% of GDP – three times higher than as of the start of the century.[15] Independent growth forecasts are being revised downwards, with 4.3% growth and 0.3% contraction being forecasted for 2022 and 2023.[16]

This report assesses whether increased private health provision could have a role to play in alleviating the existing pressures. There is a strong link between health outcomes and wider macroeconomic performance. To the extent that supporting extra private provision can have a positive effect on the nation's health, these wider effects could support wider benefits that make this policy appealing from a cost-benefit perspective.

[11] https://www.kingsfund.org.uk/sites/default/files/media/commission-appendix-uk-private-health-market.pdf

[12] https://www.theguardian.com/commentisfree/2021/jul/27/uk-two-tier-health-system-private-healthcare-nhs-waiting-lists

[13] https://www.kingsfund.org.uk/sites/default/files/media/commission-appendix-uk-private-health-market.pdf

[14] https://healthplan.co.uk/blog/cost-of-private-surgery

[15] https://obr.uk/overview-of-the-july-2022-fiscal-risks-and-sustainability/

[16] https://www.ey.com/en_uk/news/2022/10/uk-economy-expected-to-be-in-recession-until-summer-2023#:~:text=0.3%25%20contraction%20in%20UK%20GDP,ONS%20revisions%20to%20historical%20data.

This report explores the role of private health insurance and wellbeing services in bringing wider benefits to society

This report is structured as follows:

- **AXA Health services** provides additional context on AXA Health services provided, differences compared to NHS treatment pathways, and specifically for the three areas the report focuses on: MSK, cancer, and mental health. It also gives an overview of AXA Health's Doctor at Hand service.
- **Methodology** outlines the economic framework used in the analysis, the modelling approach undertaken, and the specific scenarios modelled.
- **Drawing conclusions** presents the results of the analysis and impacts.
- **Policy recommendations** discusses the policy environment and recommendations.

AXA Health services

AXA Health is a significant provider of private healthcare in the UK

AXA Health was founded in 1940 as the Association for Hospital Services, aiming to help everyday people, on average incomes, access expert medical care fast. In 1999, it joined the AXA Group, making AXA Health part of the world's largest insurance group, serving 107 million clients worldwide. In 2020, AXA brought together its three existing brands, AXA PPP healthcare, Health-on-Line and AXA ICAS Limited to create AXA Health, focused on providing health insurance and health and wellbeing services for individuals and businesses.[17]

AXA Health aims to provide a high quality service for its members. For example, through its Fast Track Appointment service, on average AXA members are seen twice as fast as those members whose GPs have referred them to a named private specialist.[18] AXA Health achieves high customer satisfaction rate, with 90% of members with over 250 employee being satisfied with the service they receive from AXA Health during their claim. In addition, 91% of members who used AXA's Working Body service, aimed at addressing musculoskeletal health problems, said they would use the service again [19]

Today, AXA Health is one of the leading UK health and wellbeing specialists, offering individuals and employers health insurance and health and wellbeing support services. Across it services, AXA Health supports the health and wellbeing of 2.8 million individuals in the UK. AXA is one of the main providers of health insurance to employers, covering 30-36% of the health insurance market for businesses with more than 250 employees.[20]

Table 1 below shows at the high level the total number of claimants and corresponding average costs per claimant for AXA Health's members with over 250 employees.

Table 1 Total claimants and average costs

TOTAL CLAIMANTS	
Average total lives	1,239,814
Average cost per claimant	£1,996
Average claim rate per life	£507
Musculoskeletal incidence	11.2%
Mental health incidence	3.3%

[17] https://www.axahealth.co.uk/about-us/

[18] 2016 Fast Track Appointments service data, https://www.axahealth.co.uk/health-insurance/fast-track-appointments/

[19] https://www.axahealth.co.uk/globalassets/corporate/end-state-pdfs-0521/lc-pmi-advance-brochure-ins-wr-advanceclientbrochure.pdf

[20] LaingBuisson

TOTAL CLAIMANTS	
Neoplasm and carcinoma incidence	1.7%

Source: Healthcare performance report – Large Corporate Portfolio, AXA Health, 17 May 2022

Note: Data relates to period April 2021 – March 2022. While this report focuses on cancer, any incidence of suspected cancer is recorded as neoplasm and carcinoma until diagnosed.

Table 2 below shows the top five conditions that AXA Health treats, by number of claimants.

Table 2 Top five conditions

CONDITION	NUMBER OF CLAIMANTS
Musculoskeletal	139,189
Neoplasms and Carcinomas	21,615
Unspecified conditions	70,241
Mental health disorders	40,860
Digestive system disorders	20,294

Source: Healthcare performance report – Large Corporate Portfolio, AXA Health, 17 May 2022

Note: Data relates to period April 2021 – March 2022. While this report focuses on cancer, any incidence of suspected cancer is recorded as neoplasm and carcinoma until diagnosed.

This report focuses on three services of interest

In this analysis, we focus on three specific areas of treatment: MSK, mental health and cancer. We also only focus on the treatments provided for employers with over 250 employees. These areas have been picked on account of their relative size at AXA Health and the large benefits from improving health in these areas. There is also plentiful publicly available data on these areas on which to draw comparisons.

We also give a qualitative overview of AXA Health's Doctor at Hand service. Because of the wide-ranging role that GPs play in initial diagnoses and referrals to specialists, it would be very difficult to quantify the wider effect of the private provision of GP services. However, its role in diverting patients away from an already overburdened NHS GP service is very valuable.

Musculoskeletal (MSK) conditions

Musculoskeletal conditions include injuries or disorders to the joints, bones, muscles, or multiple body areas or systems. There are more than 200 musculoskeletal conditions, which are typically characterised by pain and limitations in mobility and dexterity, and are the most common form of non-cancer pain. More years are lived with musculoskeletal disability than any other long term condition, and it has an enormous impact on the quality of life of millions of people in the UK.

MSK conditions are common; they affect one in four of the adult population in the UK, account for 30% of GP consultations in England and 25% of all surgical interventions in the NHS in England. MSK

conditions are one of the main conditions that account for working days lost due to work-related ill health, with 8.9 million working days lost each year.[21] MSK conditions also often co-exist with other co-morbidities, such as diabetes, depression and obesity.[22] As a result, they can result in long term sickness, lower physical and mental wellbeing and economic inactivity.

As MSK is a broad category involving a wide range of physical disorders across the body, it accordingly draws upon a wide range of treatments and interventions. Treatments include consultations with specialists; diagnostics such as pathology or radiology, including X-rays or blood tests for example; treatments with complementary practitioners such as acupuncturists, chiropractors, osteopaths; physiotherapy; surgery; and other treatments.

At AXA Health, patients can enter the MSK pathway through a GP referral (including through Doctor at Hand, as referred to below), through self-referral or through occupational health. The methods for diagnostics include digital triage, face to face consultations or video consultations with a physiotherapist, advanced level practitioners or other specialists. Treatments may include virtual or in-person physiotherapy, which includes patients receiving general advice and exercise programs. Patients may also receive interventions such as injections and surgery.

In FY22, AXA Health had around 140 thousand claimants claiming for MSK and connective tissue disorders from its portfolio of large employers.[23] The total treatment benefit paid for these claimants was nearly £180 million.[24]

Around one third (32%) of AXA Health's MSK claimants have disorders relating to the spine, with a further fifth each relating to knee or leg (22%) and arm or shoulder (19%) issues. The rest include ankles, feet, hips and the pelvis, hands and wrists, as well as other muscle, ligament, tissue, joint and bone issues.

A claimant may claim for just a consultation, or a consultation and diagnostic, treatment including physiotherapy or surgery, or some combination of several.

Mental health conditions

Mental health disorders refer to a wide range of conditions that affect mood, thinking and behaviour. The most common mental health disorders include anxiety and depression.

Mental health problems are common, with one in four people experiencing a mental health problem of some kind each year in England. Furthermore, one in six report experiencing a common mental health problem, such as anxiety or depression, in any given week in England. Although common, mental health conditions are often not well managed, with an estimated one in eight adults with a

[21] https://www.hse.gov.uk/statistics/dayslost.htm

[22] https://www.england.nhs.uk/ourwork/clinical-policy/ltc/our-work-on-long-term-conditions/musculoskeletal/

[23] 139,189 in total from April 2021 – March 2022. Source : LC Apr21 to Mar21 MK MH BD.

[24] £178,526,960 over the same period.

mental health problem not getting treatment. The most common treatment offered is psychiatric medication.[25]

Poor mental health impacts not only on individuals, but also their families, resulting in lost income, lower educational attainment, poorer quality of life and a shorter life span.[26] [27] [28] Mental illness is responsible for 72 million working days lost and costs £34.9 billion each year.[29] People with long term mental health conditions lose their jobs every year at around double the rate of those without a mental health condition.[30] In addition, mental health problems can seriously exacerbate physical illness, affecting outcomes and the cost of treatment. The effect of poor mental health on physical illnesses is estimated to cost the NHS at least £8 billion a year.[31]

The prevalence of depressive symptoms among adults in Great Britain rose after the start of the Covid-19 pandemic. It rose from 10% just before the pandemic to around 19% by June 2020 and 21% by early 2021. Surveys of children and young people's mental health found increases in prevalence too.[32]

Improving Access to Psychological Therapies ("IAPT") is an NHS service for people in England over the age of 18. Psychological therapies can treat conditions such as depression, different forms of anxiety, panic and other phobias, obsessive-compulsive disorder, post-traumatic stress disorder and body dysmorphic disorder.

Children and young people's mental health services ("CYPMHS"/ "CAMHS") is the NHS services for children and young people who have difficulties with their mental health or wellbeing. These specialist services are provided by psychiatrists, psychologists, social workers, nurses and other practitioners. Access to these services can vary depending on location.

At AXA Health, patients can access support for mental health problems either through a GP referral (including Doctor at Hand), through self-referral, occupational health, or through Employee Assistance Programme ("EAP") support services. Members are offered an initial assessment with a registered clinician if they have been self-referred or referred via their GP for talking therapy. Higher severity and complex cases are referred to a psychiatrist, usually by a GP. Treatments may be in patient or outpatient and include talking therapies and medication.

[25] https://www.mind.org.uk/information-support/types-of-mental-health-problems/statistics-and-facts-about-mental-health/how-common-are-mental-health-problems/

[26] http://apps.who.int/iris/bitstream/handle/10665/87232/9789241564618_eng.pdf;jsessionid=BD93A72249BC2F35D43B4B4681AEFC4F?sequence=1

[27] https://pubmed.ncbi.nlm.nih.gov/25914875/

[28] https://jamanetwork.com/journals/jamapsychiatry/article-abstract/2110027

[29] https://www.centreformentalhealth.org.uk/publications/mental-health-work-business-costs-ten-years

[30] https://www.gov.uk/government/publications/thriving-at-work-a-review-of-mental-health-and-employers

[31] https://www.kingsfund.org.uk/projects/time-think-differently/trends-disease-and-disability-mental-physical-health

[32] https://commonslibrary.parliament.uk/research-briefings/sn06988/

In FY22, AXA Health treated around 41 thousand patients for mental health conditions. This number has been growing over time, from around 23 thousand in FY19. The total treatment benefit paid for these patients was over £50 million.

Cancer

Cancer is a condition where cells in a specific part of the body grow and reproduce uncontrollably. The cancerous cells can invade and destroy surrounding healthy tissue, including organs. There are more than 200 types of cancer, with the most common being breast cancer, lung cancer, prostate cancer and bowel cancer. Lung cancer is by far the most common cause of cancer death in the UK, accounting for around a fifth (21%) of all cancer deaths. The next most common causes of cancer death are bowel cancer (10%), prostate cancer (7%) and breast cancer (7%). One in two people will develop some form of cancer during their lifetime.

Treatments for cancer include surgery, chemotherapy, radiotherapy and biological therapies. The impacts of having cancer, however, does not always end when treatment finishes. The wider implications include social isolation, financial worries caused by disruption to work, and the potential impact on education and future prospects for those who are treated for cancer as children or young adults.

At AXA Health, if a member has a concerning symptom they believe could be breast or skin cancer, for example, they can request diagnostic support without needing to obtain a GP referral before contacting Customer Service to request an appointment.[33] This will often be a one stop service, with all tests and diagnostics being provided in one appointment. Members with other types of cancers can access treatment via a GP referral (which includes Doctor at Hand). Treatments include surgery, radiotherapy and other systematic anti-cancer services.

From the moment the customer is diagnosed with cancer, they are connected to their own dedicated case manager in AXA Health's Cancer Care Team who supports them through their treatment journey. Where a customer has requested it, patients can access a dedicated Health Coach to help them with any nutritional or lifestyle changes following their cancer diagnosis and treatment plans. There is also a 24/7 help line for anyone with a concern about cancer.

In FY22, AXA Health had over 15 thousand patients relating to neoplasms and carcinomas, of which nearly 9 thousand received a cancer diagnosis. The treatment benefit paid for these claimants was over £107 million. The most common cancers by treatment benefit paid related to breast cancer (3112), prostate cancer (1052) lower gastrointestinal (748), upper gastrointestinal (303) and blood (293). Incidence of all of these diagnosed cancers have risen at AXA Health since FY19.[34]

[33] AXA only provides direct access services for breast and skin cancer.

[34] Healthcare performance report – Large Corporate Portfolio, AXA Health 17 May 2022.

Doctor at Hand

General Practitioners (GPs) treat all common medical conditions, referring patients to hospitals and other medical services for urgent and specialist treatments. GPs can diagnose many illnesses, determining whether a patient needs to see a doctor with more specialist training.

The NHS is currently facing immense pressures on GP services. There is a shortage of around 4,200 full time equivalent GPs, which is projected to rise to around 8,900 by 2030/31, relative to the number needed. Should issues such as stress and burnout continue in the profession, the projected shortfall could be twice as many by 2030/31. [35]

Public satisfaction with NHS GP services is correspondingly falling. In 2022, 72% of patients in England reporting having a good experience of their GP practice, down from 83% in 2021 and 82% in 2020. Furthermore, 55% of patients who needed an appointment said they had avoided making one in the last 12 months, up from 42 % in 2021. Appointments are becoming more difficult to make, with 27% of patients saying they found it too difficult, up from 11% in 2021.[36]

As the NHS struggles to satisfy patient demand, AXA Health's Doctor at Hand aims to ease some of these pressures. This Doctor at Hand service provides its patients with access to a GP at any time of the day on any day of the year online via video or phone.

Large employer members are able to download the Doctor Care Anywhere ("DCA") Doctor at Hand app, with login information provided by their employer. Members are then able to book an appointment with a GP. The service provides 20 minute appointments, rather than the standard 10 – 15 minutes as provided by the NHS, and allows GPs to prescribe medication needed.

When patients use the app, they receive confirmation of the appointment and also have access to appointment notes and referrals. For enhanced DCA, members will be directed into fast track or diagnostics, with results coming back to DCA for follow up with the GP.

Although this provides a service in itself, it also acts as the entry point into other AXA treatment pathways. Any ongoing services or medical interventions into AXA Health would be treated as a GP referral, similarly to an NHS GP appointment.

[35] https://www.health.org.uk/news-and-comment/news/a-quarter-of-gp-and-general-practice-nursing-posts-could-be-vacant-in-10-years#:~:text=There%20is%20currently%20a%20shortage,the%20rising%20need%20for%20care.

[36] https://www.bloomberg.com/news/articles/2022-07-14/patients-find-it-too-difficult-to-book-gp-appointments

Methodology

This study has been undertaken using published evidence, in line with UK Government Appraisal guidance. We take the following steps to determine the value of private healthcare:

- **Develop the economic framework:** We articulate the channels through which private health cover has a positive impact on the economy.
- **Assemble the evidence and inputs needed:** We review published evidence and data on the positive economic impacts of private health cover.
- **Develop a model which draws on this evidence:** Using the evidence, we build a model to estimate the monetary value of these impacts.
- **Analyse different scenarios:** We model a range of scenarios reflecting the impact of private health cover to obtain an estimate for each.
- **Draw conclusions:** We draw conclusions on the basis of the evidence gathered and the economic analysis.

Developing the economic framework

Most treatments offered by private providers are also available on NHS provision. The NHS offers a wider selection of treatments (and scope of conditions covered).

Treatments that are offered through private provision often provide quicker access to services: faster triage, quicker diagnosis, access to more specialist services sooner, quicker access to treatment. While the specific clinical outcomes from any individual intervention is usually the same, the fact the intervention takes place sooner can lead to better patient outcomes in aggregate. For example, evidence from mental health services in England show that shorter wait times are associated with better patient outcomes reported by clinicians.[37]

In addition, quicker treatment can reduce stress and anxiety once in treatment. Evidence has shown that that the mental health and quality of life of patients and caregivers deteriorated with increased wait times, something the faster treatment provided by private health care could prevent.[38] In addition, patients indicated that acknowledgment of concerns and periodic communication about wait-list position and indicated procedure date could alleviate the mental health impact of waiting. An improved patient experience that private health care strives to provide is likely to meet those needs more effectively than the support provided by the NHS.

[37] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6221005/#:~:text=The%20association%20between%20longer%20waiting,the%20shortest%20waiting%20time%20quintile.

[38] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8235883/

A healthier UK population is linked to greater productivity and lower unemployment. This has positive spill over effects on the UK economy:

- A healthier population improves the productivity and wellbeing of those who currently provide unpaid care. One study estimates that carers lose £11 billion in wages annually due to having to reduce working hours or quit working entirely to fulfil care duties.[39]

- Good health is associated with higher employment rates. According to Public Health England (now Office for Health Improvement and Disparities), people with one health condition have an employment rate of 61%, while those with five or more have an employment rate of 23%.[40]

- Good health is associated with a higher share of the population participating in the job market and looking for work in general. In August 2022, the number of UK individuals who are economically inactive (i.e. aged between 16 and 64 and not looking for work) because they are long-term sick hit a record high of nearly 2.5 million.[41]

- Productivity is higher. Each year, 131 million working days are lost to absence due to ill health. It is estimated that combined costs to the UK economy from worklessness and sickness absence amount to £100 billion annually, suggesting that significant gains to the UK economy can be made by improving the health of its workforce.[42]

- Finally, higher employment rates is associated with lower welfare payments.

The fundamental routes through which private provision benefits society is by quicker treatment. So while we assume that more private provision would be a good thing, we recognise that there are linkages, other effects and other impacts that need to be assessed before concluding. For instance:

- **Correlation issues**. If there is a correlation between wealthier individuals, health levels, and their propensity to opt-in to private health insurance, economic modelling may overestimate the benefits of private health insurance, even when provided by an employer.

- **Self-selection**. Although less of an issue for private health insurance provided through large employers, there may be self-selection issues if individuals opt-in to private health insurance if they know they have a family history of certain medical issues.

- **Skewed benefits**. Although provided by large employers, it is still possible that the benefits of private health insurance are somewhat skewed because of affordability and willingness to pay.

- **Distributional effects**. The benefits of private provision may not be evenly distributed across the UK, but instead in areas where large employers are more likely to provide it.

[39] https://nefconsulting.com/wp-content/uploads/2019/06/Unpaid-Carers-Technical-Note-Accompanying-Model.pdf

[40] https://www.gov.uk/government/publications/health-matters-health-and-work/health-matters-health-and-work

[41] https://www.ons.gov.uk/employmentandlabourmarket/peoplenotinwork/economicinactivity/timeseries/lf69/lms

[42] https://www.gov.uk/government/publications/health-matters-health-and-work/health-matters-health-and-work

- **Negative impacts on resources**. Private health provision may divert resources away from the NHS creating other costs.

While these complications are not explicitly modelled in the economic framework, these are acknowledged in the discussion around policy implications below.

Assembling the evidence and inputs needed

In estimating the scale of effects and the benefits that private provision currently provides, a range of public and private information sources have been used.

The publicly available information used includes the following:

- **Waiting times**. NHS public databases of referral-to-treatment waiting times[43] and its cancer waiting times data collection[44] are used. To align with the rest the data, figures from March 2022 are used.

- **Prevalence of disorders**. Public NHS data is used to estimate the prevalence of MSK disorders, mental disorders and cancer in the UK population.

- **Productivity loss.** Medical literature has been used to understand the impacts that MSK, mental disorders and cancer have on productivity loss due to illness.

- **Quality of life**. Academic literature and surveys which describe the quality of life associated with different disorders in numerical terms has been used to estimate the financial cost of deteriorations in the quality of life. This has been used alongside Green Book estimates of the value of life.

- **Impact on benefits claims**. Government provided data on the impact of illness on sickness benefits claims has been used.

The private information taken from AXA Health includes the following:

- **Patient numbers**. Patient numbers are taken from internal AXA Health reports on employers with over 250 employees.

- **Pathway journey**. The patient journey has been described to us through conversations with experts at AXA Health.

- **Types of treatment**. AXA Health's Performance report for AXA's customers with over 250 employees from April 2021 to March 2022 is used to capture the types of treatment for MSK disorders, mental health disorders and cancer and how commonly these treatments are used.

[43] https://digital.nhs.uk/data-and-information/data-collections-and-data-sets/data-collections/cancerwaitingtimescwt

[44] https://www.england.nhs.uk/statistics/statistical-work-areas/cancer-waiting-times/

- **Waiting times**. Data on AXA Health's waiting times for treatments on their mental health, MSK and cancer pathways.

Developing a model which draws on the evidence

The model developed for this work focuses on three of AXA's main patient pathways: MSK, mental health and cancer. The pathways are examined for AXA's large employer customers whose coverage extends across a wide range of employees at different levels.

We compare current patient experience under private provision to current patent experience in NHS provision. We use this to estimate the impact of private provision against an implied counterfactual where the same volume of activity would all be undertaken by the NHS at the same time.

The main metric used to compare NHS provision to private healthcare are waiting times. We model several scenarios that capture the effect that private health insurance has on reducing waiting times relative to the NHS.

For each of these pathways, and informed by a review of the evidence, we capture three main sources of the economic value of private healthcare:

1. Impact on welfare benefits
2. Impact on worker productivity
3. Impact on quality of life

This modelling does not include the direct cost savings to the NHS from reducing patient numbers and are likely to be conservative (e.g. they exclude benefits from avoiding longer term illnesses).

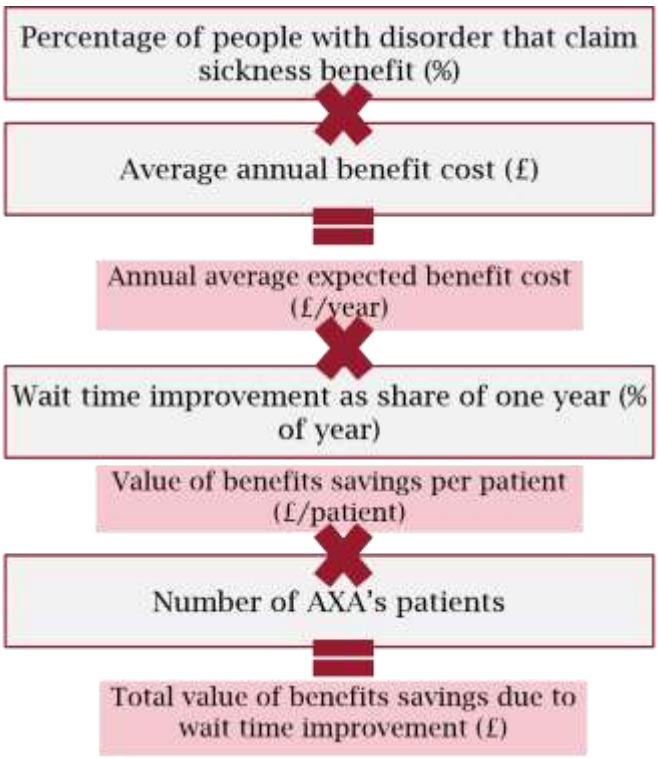
The impact on welfare benefits

Many health conditions impact individuals' ability to work, with many individuals suffering from MSK conditions, poor mental health and cancer only being able to work limited hours or not at all. Some of these individuals claim Employment Support Allowance ("ESA") once their Statutory Sick pay runs out. ESA is a Government benefit scheme that supports individuals unable to work due to health reasons. The faster route to treatment that private health cover provides can get employees back to good health and into work faster, leading to a reduction in sickness benefits claims. We model the effects of private cover on sickness benefits as follows, and as shown in **Figure 1**:

- For each treatment pathway, we calculate the % of claimants who claim ESA relative to the total UK population living with the conditions covered by the treatment pathway to calculate a % of patients that claim benefits.
- We apply this % to the average annual amount claimed under ESA (£4,004 as of 2022) to calculate the annual average expected cost for a patient on each pathway.

- To calculate the impact of reduced waiting times, we calculate the amount of time that is saved by patients' use of private health care and multiply this by the annual expected claim cost for a patient.
- To estimate the total impact for a pathway, we multiply the impact for one patient by the number of patients that AXA Health treats within the relevant pathway.
- To determine the total impact on welfare benefits we add the values for the three patient pathways.

Figure 1: Calculating the benefits from reduced sickness benefits



The following assumptions are made:

- Since large employer cover will be relevant for those of working age only we have ignored benefits that are only redeemable once a patient has reached the state pension age. In practice there are other benefits pertaining to older customers, but these are not modelled here.
- This modelling does not take into consideration any benefit payments which are aimed at helping individuals complete everyday tasks such as the Personal Independence Payment and the Attendance Allowance. An assumption is made that the majority of the MSK and mental health patients that AXA Health treats are still independent.
- Since all patients in this model are large employer patients, it is assumed that the MSK and mental health treatments through AXA Health would allow the patient to return to work, meaning the 'work-related activity group' ESA figure of £77 per week is used.
- Given that we use the 'work-related activity group' ESA figures in our model, the estimated benefit savings only capture the short-term benefits of faster treatment due to private health insurance. However, if MSK and mental health conditions are not treated quickly enough, they are more

likely to turn into long-term disabling conditions. Individuals with such conditions would move from the 'work-related activity group' into the 'support group' which is associated with a higher rate of £117.60 a week. In addition, many individuals living with long-term conditions will claim for Personal Independence Payments (PIP). In fact, 65% of PIP claimants had a psychiatric disorder or MSK disease as their main disabling condition.[45] Unlike ESA for those in the work-related activity group which has a one-year limit, support group ESA and PIP can be awarded indefinitely. Given that our model does not take into account the role of faster treatment in preventing these long-term benefit costs, the total estimated benefit savings are likely to be a significant underestimate.

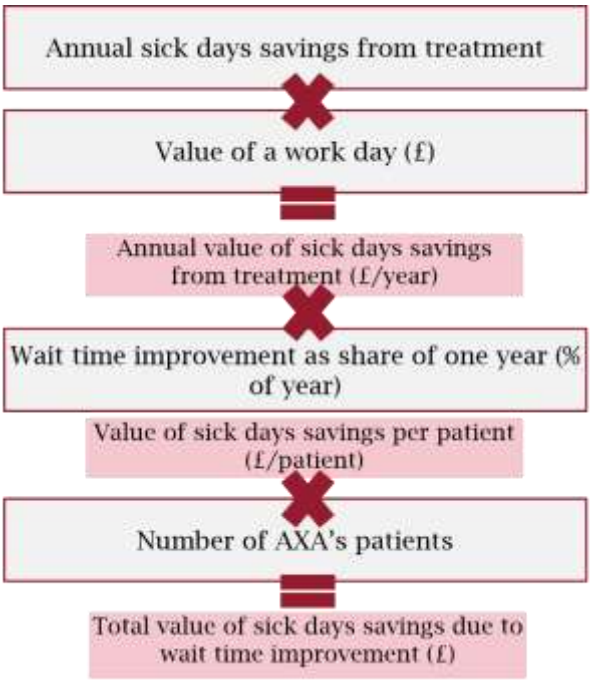
The impact on worker productivity

Productivity is lost every year due to absenteeism resulting from poor health. When patients are able to receive treatment more quickly through private health care, they are likely to return to good health sooner, having to take less time off work. We estimate the impact of private health care on worker productivity as follows, and as shown in **Figure 2**:

- For each treatment pathway, we calculate the average amount of time a patient takes off work due to their condition.
- We also calculate the value of a work day by taking the average annual wage (£31,408 as of 2022) and dividing it by the number of working days per year. We multiply this by the amount of days taken off work to determine the total amount of wages lost each year.
- To calculate the impact of reduced waiting times, we calculate the amount of time that is saved by patients' use of private health care as a share of one year and multiply this by the annual amount of wages lost.
- To estimate the total impact for a pathway, we multiply the impact for one patient by the number of patients that AXA Health treats within the relevant pathway.
- To determine the total impact on welfare benefits we add the values for the three patient pathways.

[45] https://www.gov.uk/government/statistics/personal-independence-payment-statistics-to-april-2022/personal-independence-payment-official-statistics-to-april-2022#pip-statistics-by-disabling-condition

Figure 2: Calculating the savings from increased productivity



The following assumptions are made:

- Without more granular information on patients' salaries, we assume that this group of patients earns the national average. In practice, large employer customers may be more likely to earn more than the national average, meaning that benefits may be underestimated.
- We assume that the treatments provided sufficiently cure the condition, insofar as patients do not have to keep on taking time off work due to their condition after the treatment.

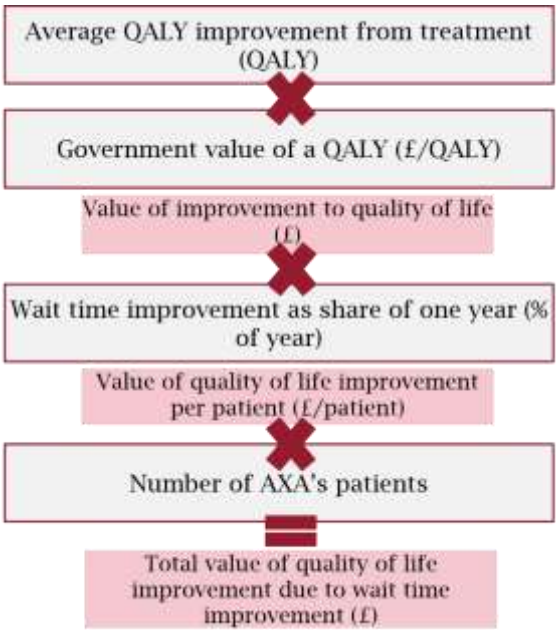
The impact on quality of life

Quality Adjusted Life Years ("QALYs") are a well-established method used to measure the state of health of an individual and changes in a person's quality of life. Treatment for health conditions tend to improve QALYs by returning patients to better health. If patients are treated sooner, they return to better health more quickly, improving their quality of life. We estimate the impact of reduced waiting times on quality of life due to private health cover as follows, and as show in **Figure 3**:

- For each treatment pathway, we draw from the literature to calculate the average QALY improvement of treatments commonly offered by AXA within each pathway.
- Multiplying the QALY improvement by the government monetary value of a QALY, we obtain a monetary value that captures the impact on quality of life.
- To calculate the impact of reduced waiting times, we calculate the amount of time that is saved by patients' use of private health care as a share of one year and multiply this by the monetary value of a QALY for the relevant pathway.
- To estimate the total impact for a pathway, we multiply the impact for one patient by the number of patients that AXA treats within the relevant pathway.

- To determine the total impact on welfare benefits we add the values for the three patient pathways.

Figure 3: Calculating the benefit of improved quality of life



We make the following assumptions:

- We assume that the data is representative of whole population. We do not model any behavioural responses of individuals or suppliers under different scenarios.

Analysing different scenarios

As noted above, the underlying driver for incremental value of private provision in this model comes through the reduced waiting times. We use data on NHS waiting times and AXA Health's waiting times for the MSK, mental health and cancer pathways, to determine how much faster patients receive treatment through private provision. The resulting wait time improvement is used to value the benefits associated with private health insurance using the methods set out in the previous sections.

Table 3 below summarises the central case used in our report and are AXA Health's most up to date and best conservative view of waiting times for different pathways. In addition, **Table 3** sets out wait times in case of a 50% and 70% reduction NHS wait times. The best conservative estimate of AXA Health's wait times lie below or between the wait times set out in these scenarios.

Table 3 AXA wait times

PATHWAY	NHS WAIT TIMES (DAYS)	AXA WAIT TIMES (DAYS)	70% REDUCTION WAIT TIMES (DAYS)	50% REDUCTION WAIT TIMES (%)
MSK	133	18	40	67
Mental health	73	28	22	36

PATHWAY	NHS WAIT TIMES (DAYS)	AXA WAIT TIMES (DAYS)	70% REDUCTION WAIT TIMES (DAYS)	50% REDUCTION WAIT TIMES (%)
Cancer	50	15	15	25

Source: Consultant-led Referral to Treatment data; NHS Cancer Waiting Times; AXA Health internal sources

Drawing conclusions

Based on AXA Health's most up to date view of their wait times for the different pathways, we estimate that private provision as provided by AXA Health creates benefits that are valued at about £442 million, as presented in **Table 4**:

Table 4 Benefits from a reduction in waiting times – AXA Health wait times

SOURCE OF VALUE	MSK	MENTAL HEALTH	CANCER	TOTAL
Impact on quality of life	£122,933,918	£35,262,740	£231,806,448	**£390,003,105**
Impact on worker productivity	£29,320,808	£5,296,598	£8,166,638	**£42,784,043**
Impact on sickness benefits	£6,449,336	£2,442,286	£511,945	**£9,403,567**
Total	**£158,704,062**	**£43,001,623**	**£240,485,030**	**£442,190,715**

Source: Frontier calculations, sources used in calculations are set out in detail in the annex

Considering the two alternative scenarios set out in **Table 3**, the benefits resulting from a 50% and 70% reduction in NHS wait times are valued at £298 and £418m respectively, as set out in **Table 5** and **Table 6** below.

Table 5 Benefits from a 50% reduction in NHS waiting times

SOURCE OF VALUE	MSK	MENTAL HEALTH	CANCER	TOTAL
Impact on quality of life	£71,622,369	£28,210,192	£165,576,034	**£265,408,595**
Impact on worker productivity	£17,082,557	£4,237,278	£5,833,313	**£27,153,148**
Impact on sickness benefits	£3,757,440	£1,953,828	£365,675	**£6,076,943**
Total	**£92,462,366**	**£34,401,298**	**£171,775,022**	**£298,638,686**

Source: Frontier calculations, sources used are set out in more detail in the annex

Table 6 Benefits from a 70% reduction in NHS waiting times

SOURCE OF VALUE	MSK	MENTAL HEALTH	CANCER	TOTAL
Impact on quality of life	£99,416,125	£39,964,438	£231,806,448	**£371,187,011**
Impact on worker productivity	£23,711,610	£6,002,811	£8,166,638	**£37,881,058**

SOURCE OF VALUE	MSK	MENTAL HEALTH	CANCER	TOTAL
Impact on sickness benefits	£5,215,550	£2,767,924	£511,945	**£8,495,419**
Total	**£128,343,285**	**£48,735,173**	**£240,485,030**	**£417,563,487**

Source: Frontier calculations, sources used are set out in more detail in the annex

The greatest source of value resulting from a reduction in wait times is the impact on quality of life. This is mainly driven by the quality of life improvements from cancer treatment, as this treatment is often life-saving, adding quality life years to a patient's lifespan.

The quality of life improvements from cancer treatment also lead to the cancer pathway being the area where a reduction in waiting times provides the greatest value. The MSK pathway is also associated with significant benefits (benefitting more from wait time improvements than cancer and mental health in the areas of worker productivity and sickness benefits). This is driven in part by the high number patients treated by AXA Health for MSK conditions.

Policy implications

Capacity constraints and implications

To provide health services, the NHS in each nation of the UK needs sufficient numbers of people with relevant skills. Depending on the healthcare role, it can take years to train or recruit. Furthermore, investment is needed to ensure high quality capital assets are used in treatment, and that these can be utilised efficiently to ensure productivity is high. NHS funding for these comes from national governments. On the other hand, private provision is funded predominantly through insurance premiums, but also direct payment for services as well as some purchases from the NHS for additional capacity.

The overall capacity of health services cannot be expanded quickly. However, there may be avenues to explore in redistributing demand for healthcare services to where there is capacity. With the NHS currently overburdened, and a large differential in waiting times between the NHS and private providers, there is scope to do this.

In this report, we have shown that, where it is possible to reduce waiting times for patients, there can be significant benefits to both individuals and society. Our scenario modelling shows that a reduction in waiting times can yield benefits to individuals and society. In addition to the benefits associated with improved quality of life, worker productivity and reduced benefit payments, there are benefits to individuals' earnings potential and tax revenues. This modelling does not include the direct cost savings to the NHS from reducing patient numbers and are likely to be conservative (e.g. they exclude benefits from avoiding longer term illnesses). Given current wait times at the NHS versus those likely in the private pathways, it is likely that more private provision would be beneficial to society. We would expect that, as more patients use private channels the benefits to society decrease as the waiting time differential decreases.

Barriers to take up

While this report does not specifically address the barriers to further private provision and take up, we outline some potential barriers here.

As noted above, on the supply side, there may be barriers to private provision in terms of labour and capital. On the labour side, healthcare professionals need to be trained and recruited which isa process that takes years. On the capital side, there needs to be investment in infrastructure and medical equipment which also takes time to implement.

On the demand side, barriers to private medical insurance take up could take many forms:

- There is a cost associated with private medical insurance and private health and wellbeing support services, regardless of whether it is provided for free by an employer or purchased directly. When provided by an employer, it is received as a benefit in kind, and employees need to pay income tax on this benefit.

- There may also be cultural or psychological barriers to taking up private medical insurance or private health and wellbeing support services. Increasing evidence from behavioural economics shows how behaviours of people are affected by how choices are framed and whether they know others who have made similar choices ('social proof'). In some cases these individuals may also be making decisions on behalf of companies. For decades, the NHS has been funded through general taxation, providing health services free at the point of use, independent of ability to pay. For many, this is the only way of accessing healthcare known or considered. Behavioural barriers created by this framing may prevent even 'rational' corporate actors, alongside individuals, from assessing the impact of private insurance.

The Government has a number of levers available to it to address these barriers directly.

Policy recommendations

In what follows, we focus on recommendations aimed at improving access to and take up of private medical insurance, rather than improvements to the NHS directly. These recommendations may address the barriers described above.

1. **Encouraging more employers to offer PMI and private health and wellbeing support services**

There may be benefits to incentivise and encourage more firms to offer private medical insurance as a benefit in kind. AXA's internal evidence shows that, when offered, a high proportion of employees take up private medical insurance through their workplace. Furthermore, employers are also investing in increased ranges of private health and wellbeing services, such as menopause support, men and women's health and fertility services, and virtual GP services. Potential routes include (i) more large corporates and larger SMEs offering PMI, (ii) smaller SMEs or the self-employed offering PMI to its employee(s), and (iii) firms offering PMI to a greater proportion of its employees.

2. **Encouraging cultural shifts and attitudes towards PMI and health and wellbeing support services take up**

Today, PMI and private health and wellbeing support services are taken up by the minority. PMI is predominantly offered through employers, or seen through advertising and individuals' research. But there may be benefits to increasing openness and awareness around the benefits to PMI to patients across the UK. This could include improving the dialogue around the circumstances in which private medical insurance would be beneficial for individuals and families. For example, NHS healthcare professionals such as GPs may want to explore and explain the benefits with patients.

3. **Reduce tax employers pay on PMI and health and wellbeing support services**

There may be more direct ways to incentivise take up of PMI through reducing the price and/or tax that people pay on PMI. For instance, this could include an employer NIC Class 1A exemption in the form of a 13.8% reduction (from April 2023) on the benefit provided. This would focus directly on supporting UK businesses and the workforce, and could apply to insurance and health and wellbeing services.

Conducting reviews to build evidence for policy change

Finally, there may be merit in conducting an independent review of the demand-side barriers to take up. This would help inform the efficacy of the policy recommendations outlined above. For instance, a review may help to:

- uncover any real or perceived administrative or financial barriers to firms offering PMI and other health and wellbeing services to their employees, and therefore test what sorts of incentives or reframing may be required to reduce these barriers;
- explore whether there are unconscious or conscious psychological barriers to taking up PMI, and therefore advise on what types of interventions may remove these barriers, such as changes to social proof;
- understand the importance of price in informing take up of PMI, and therefore better predict the impact of tax cuts on take up and revenue.

Annex A : Data sources and additional calculations

Waiting times

- To determine NHS waiting times in the treatment pathways, we use two public NHS databases on waiting times: The *Consultant-led Referral to Treatment* data and the *NHS Cancer Waiting Times* data.

- We use the *Consultant-led Referral to Treatment* data to calculate the waiting times for the MSK and mental health pathway. [46]

  - This data captures the number of weeks from referral to elective treatment led by a consultant. The waiting period starts upon referral and comes to an end upon first treatment, the start of active monitoring or a decision not to treat.[47]

  - Since data is not split into the number of full weeks but rather into weekly periods (e.g. the patient is treated within 1-to-2 weeks) we take the upper bound of the listed waiting period.

  - Wait times are reported on a monthly basis. To align with the rest the data, figures from March 2022 are used.

- We use the *NHS Cancer Waiting Times* data to calculate the waiting times for the MSK and mental health pathway. [48]

  - This data captures the time between the decision to treat and the first definitive treatment (i.e. the first clinical intervention intended to manage a patient's disease, condition or injury).[49]

  - Data is reported in terms of the number of patients treated within different time blocks, expressed in number of days: 31 days, 32 to 38 days, 39 to 48 days, 49 to 62 days and so on.

  - To synchronize with the weekly format of MSK and mental health wait times, we take the upper bound of the wait time period to determine the number of weeks within which the patient received treatment (e.g. patients treated within 30 to 48 days have been treated within 7 weeks).

  - Wait times are reported on a monthly basis. To align with the rest the data, figures from March 2022 are used.

[46] https://www.england.nhs.uk/statistics/statistical-work-areas/rtt-waiting-times/

[47] https://www.england.nhs.uk/statistics/wp-content/uploads/sites/2/2017/10/Accompanying-FAQs-v7.32-ASI-FAQ-update.pdf

[48] https://www.england.nhs.uk/statistics/statistical-work-areas/cancer-waiting-times/

[49] https://www.datadictionary.nhs.uk/nhs_business_definitions/first_definitive_treatment.html

The impact on worker productivity

- To estimate the impact on worker productivity resulting from a reduction in wait times, the following sources are used:

- Data on **the reduction of sick days resulting from treatment** for the health conditions falling under the relevant pathways:

  - **MSK:** A report by Public Health England (2017) on the 'Return on Investment of Interventions for the Prevention and Treatments of Musculoskeletal Conditions' sets out the impact of a variety of treatments on the amount of workdays saved. Across a variety of common treatments, 4.96 work days are saved on average. [50]

  - **Mental health:** Bryce and Bryan (2021) find that across all mental health conditions, employees miss 7.8 working days on average. [51] We assume that treatment brings patients back to full health, meaning that treatment reduces work absenteeism by 7.8 days.

  - **Cancer:** The Health and Safety Executive (2016) finds that across all cancer types (including non-melanoma skin cancer), employees miss 42 days of work per year due to cancer on average. [52] We assume that the treatment is successful in treating cancer, meaning that treatment reduces work absenteeism due to cancer by 42 days.

Table 7 Impact of treatment on working days saved

CONDITION TREATED	AVERAGE NUMBER OF DAYS OF WORK SAVED
MSK	4.96
Mental health	7.8
Cancer	42

Source: Public Health England (2017), Bryce and Bryan (2021) and the Health and Safety Executive (2016)

- **The total average annual wage.** We use the ONS data on the average weekly earnings in Great Britain in 2022 to determine that the median annual wage is £31,408.[53]

[50] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/670211/musculoskeletal_conditions_return_on_investment_final_report.pdf

[51] https://link.springer.com/article/10.1007/s10198-021-01379-w#Tab6

[52] https://www.hse.gov.uk/research/rrpdf/rr1074.pdf

[53] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/bulletins/averageweeklyearningsingreatbritain/june2022

- **The total number of working days per year.** Based on the holiday entitlement rights set out by the government, we assume that for most full-time employees a full calendar year has 233 working days.

- By dividing the total average annual wage by the total number of working days per year, we establish that **the value of a working day** is £134.80.[54]

The impact on quality of life

- To estimate the impact on quality of life resulting from a reduction in wait times, the following sources are used:

- Data on the quality of life improvement resulting from treatment for the health conditions falling under the relevant pathways. We have tried to use data on the treatments most commonly offered to AXA Health's patients within each pathway, using data provided by AXA Health:

Table 8 Impact of MSK treatments on quality of life

CONDITION	TREATMENT	QALY IMPROVEMENT	SOURCE
Back pain	Cognitive and Psychological Approaches (CBT) including exercise.	0.03	Public Health England (2017)[55]
Back pain	Physiotherapy	0.0029	Public Health England (2017)[56]
All MSK	Phone assessment by a physiotherapist with treatment advice	0.007	Public Health England (2017)[57]
Spinal stenosis	Surgery	0.22	Tosteson et al. (2011)[58]
Degenerative spondylolisthesis	Surgery	0.34	Tosteson et al. (2011)[59]

[54] Holiday entitlement: Entitlement - GOV.UK (www.gov.uk)

[55] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/670211/musculoskeletal_conditions_return_on_investment_final_report.pdf

[56] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/670211/musculoskeletal_conditions_return_on_investment_final_report.pdf

[57] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/670211/musculoskeletal_conditions_return_on_investment_final_report.pdf

[58] https://pubmed.ncbi.nlm.nih.gov/22048651/

[59] Ibid.

CONDITION	TREATMENT	QALY IMPROVEMENT	SOURCE
Intervertebral disc herniation	Surgery	0.34	Tosteson et al. (2011)[60]
Knee pain	Surgery (Knee Arthroplasty)	0.17	Konopka et al. (2018)[61]

Source: Sources listed in table

Table 9 Impact of Mental health treatments on quality of life

CONDITION	TREATMENT	QALY IMPROVEMENT	SOURCE
Depression	Face-to-face CBT	0.39	Kooistra et al. (2019)[62]
Depression	Blended CBT: mixed face-to-face and online session	0.31	Kooistra et al. (2019)[63]

Source: Source listed in table

Table 10 Impact of cancer treatments on quality of life

CONDITION	TREATMENT	QALY IMPROVEMENT	SOURCE
Breast cancer	Chemotherapy with anthracycline	12.05	Lairson et al. (2015)[64]
Bowel cancer	Chemotherapy	4.62	Lairson et al. (2014)[65]
Prostate cancer	Radical prostatectomy	7.44	Harat et al. (2020)[66]

Source: Sources listed in table

- The **monetary value of a QALY.** According to HM Treasury's Green Book, the monetary value of a QALY is £70,000.[67] The National Institute for Health and Care Excellence (NICE) sets the

[60] Ibid.

[61] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6242318/

[62] Ibid.

[63] Ibid.

[64] https://www.sciencedirect.com/science/article/pii/S1098301515020434

[65] https://pubmed.ncbi.nlm.nih.gov/24920195/

[66] A Cost-Effectiveness and Quality of Life Analysis of Different Approaches to the Management and Treatment of Localized Prostate Cancer - PMC (nih.gov)

[67] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1063330/Green_Book_2022.pdf

value of a QALY between £20,000 and £30,000. We conservatively use the lower bound of £20,000.[68]

The impact on benefits claims

To estimate the impact on benefit claims resulting from a reduction in wait times, the following sources are used:

The number of sickness benefits claims per year by individuals with conditions that fall under the relevant pathways:

Table 11 Number of sickness benefit claimants by pathway

CATEGORY OF CONDITION	NUMBER OF SICKNESS BENEFIT CLAIMANTS	SOURCE
Mental health disorders	1,162,400	Viola and Moncrieff (2016)[69]
Musculoskeletal disorder	352,600	Viola and Moncrieff (2016)[70]
Cancer	29,000	Department for Work and Pensions (2012)[71]

Source: Sources listed in table

- The total number of individuals in the UK with conditions that fall under the relevant pathways:

Table 12 Number of individuals with conditions

CATEGORY OF CONDITION	UK POPULATION DIAGNOSED WITH THIS CONDITION	SOURCE
Mental health disorders	9,600,000	NHS[72]
Musculoskeletal disorder	9,600,000	Hansard, Graham Stringer[73]
Cancer	327,14	NHS (2019)[74]

Source: Sources listed in table

[68] https://www.nice.org.uk/process/pmg6/chapter/assessing-cost-effectiveness

[69] https://www.cambridge.org/core/journals/bjpsych-open/article/claims-for-sickness-and-disability-benefits-owing-to-mental-disorders-in-the-uk-trends-from-1995-to-2014/6DA7F0F56442BA881979BB81A6400D05

[70] Ibid.

[71] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/184802/work-capability-assessment-cancer-treatment-response.pdf

[72] https://www.england.nhs.uk/mental-health/

[73] Musculoskeletal Diseases - Hansard - UK Parliament

[74] https://digital.nhs.uk/data-and-information/publications/statistical/cancer-registration-statistics/england-2019#:~:text=Summary&text=There%20were%20327%2C174%20new%20cancer,is%203%2C724%20more%20than%202018.&text=There%20were%20more%20cancers%20diagnosed,)%20than%20females%20(157%2C575).

[Insert Notes]

- **The ESA** that someone expecting to return to work in the future is entitled to is £77 per week, which comes to £4,004 a year.[75]

- To calculate the **annual average expected benefit cost** for a patient in each pathway, we first calculate the likelihood of a patient with a relevant condition claiming benefits and multiply this by the annual amount of ESA paid.

Table 13 Likelihood of claiming benefits

CATEGORY OF CONDITION	% OF PEOPLE WITH CONDITION THAT CLAIM BENEFITS
Mental health disorders	12%
Musculoskeletal disorder	4%
Cancer	9%

Source: Frontier calculations, based on table 11 and 12

Table 14 Annual average expected benefit costs

CATEGORY OF CONDITION	ANNUAL AVERAGE EXPECTED BENEFIT COSTS
Mental health disorders	£484.82
Musculoskeletal disorders	£147.06
Cancer	£354.91

Source: Frontier calculations, based on table 13

[75] https://www.gov.uk/employment-support-allowance/what-youll-get

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